A Picture is Worth 150 Words: Using Wordle to Assess Library Instruction

Rhonda K. Huisman, Assistant Librarian
rhuisman@iupui.edu

Kathleen A. Hanna, Associate Librarian
kgreatba@iupui.edu

Indiana University - Purdue University Indianapolis (IUPUI)
University Library
755 West Michigan Street
Indianapolis, IN 46202-5195

Keywords: assessment, information literacy, information visualization, Indiana University-Purdue University Indianapolis, IUPUI, library instruction, tag clouds, word clouds, Wordle,

At Indiana University - Purdue University Indianapolis (IUPUI), library instruction takes place in a variety of settings, including computer labs and classrooms in the library or across campus. The available instruction time may vary from a five or ten minute introduction squeezed into a class meeting to an in-depth session lasting more than two hours or over multiple classroom visits. Librarians are involved with face-to-face, online, and hybrid (online plus face-to-face) courses as part of instructional teams in the freshman learning communities (first year seminars), and support campus programs such as University College--the first year student's "home base" for college orientation, the Honors College, Summer Bridge, as well as new endeavors, including the Research, International Study, Service and Experiential Learning (RISE) initiative. Librarians at IUPUI have a considerable history of contributing to campus planning by developing information literacy competencies and other documents to support the IUPUI Principles of Undergraduate Learning (PULs) as well as departmental curricula. With more than 30,000 diverse students from 112 countries and all 50 states, we face many of the same assessment challenges as faculty: how to be innovative and resourceful when devising appropriate assessment techniques to gather information about our impact on student learning (Angelo & Cross, 1993).

Making library instruction interactive and engaging can be challenging under any circumstances, and assessment of the standard one-shot visit is especially difficult. Choinski and Emanuel (2005) confirm "very little progress has been made in developing tools for outcome assessment in the most common type of instruction sessions given in libraries—the one shot." (p. 148). Librarians need a quick and simple method to assess the impact of their instruction and to determine if students "get it," particularly in situation where library skills and information literacy may not be among the students' priorities. The one-minute paper has long been an

effective way to generate immediate feedback from students, but student responses frequently consist of vague and indifferent comments, such as "Everything seemed clear." "No, I'm good, thanks, dude.". Librarians can use a variety of methods for assessment including self and peer evaluations, or class-specific evaluation forms (Choinsky & Emanuel, 2005), but utilizing these methods did not seem feasible in our situation. According to Angelo and Cross (1993), the one-minute paper is often modified to meet the needs of discipline-specific assessment, goals, or circumstances. We decided to try to repurpose this widely-used technique by incorporating a visual imagery tool that is freely available on the Internet and has seen some success in K-12 teaching. Wordle [http://www.wordle.net] seemed to offer a promising interactive and entertaining method of assessing what students learned during library instruction sessions by creating word clouds, either as a group or individually.

Wordle was created by former IBM programmer Jonathan Feinberg as an online game and, in fact, he still bills Wordle as a "toy" on the site's front page. This Java platform "toy" seems to have taken on a life of its own and has evolved exponentially since its launch in 2007. Users may create clouds in a variety of ways: typing in text manually, copying and pasting text, submitting a URL of a webpage or blog feed, or any website with an RSS feed, or by entering a del.icio.us user name to view the tags associated with it. When users enter the text or URL and click the Submit button, the Java program creates a random word cloud with the most frequent 150 words appearing in the cloud; the more frequently a word appears in the entered text, the larger its font in the cloud. For example, if the word "university" appears 20 times in the entered text (entered manually or via URL) and the word "student" appears only twice, "university" will be much larger than "student." Users have the option of publishing their creations to Wordle's public online gallery, which automatically generates a URL for future easy access (there is no

search feature on the site for locating images). Feinberg now provides on-site FAQs, a forum, and a blog to announce developments, ponder suggestions, and respond to issues raised by users.

(see: http://www.wordle.net/show/wrdl/1024800/IUPUI_University_Library)

With basic and advanced features that allow users to manipulate font, color, shape, and language, Wordle clouds are approaching the level of an art form. “Wordles look remarkably different from regular tag clouds—they are striking graphic statements” (Viegas, Wattenberg, & Feinberg, 2008, p.1137).

The first step in our pilot project was to identify learning outcomes for instruction in our targeted first-year seminar classes. Second, we looked at various ways in which Wordle could be implemented as an assessment tool, each of us (Huisman and Hanna) taking different approaches. Both librarians shaped their instructional sessions around the information literacy

competencies that have been adopted by IUPUI, which are based on the standards reviewed by ACRL in 2000. IUPUI has also adopted the Principles of Undergraduate Learning (PULs), which are included in core principles, critical thinking, and other essential skills that are to be integrated throughout all major fields of studies. First-year students at IUPUI (25 credits or less) are expected to be able to show the following:

Information Resources

• Students will be able to differentiate between open and restricted Web sites and explain the difference. *(ACRL Standard 1.2; PUL – Core Communication & Quantitative Skills, Critical Thinking)*

• Students will be able to evaluate a web site based on evaluation criteria. *(ACRL Standard 3.2; PULs – Core Communication & Quantitative Skills, Critical Thinking, Integration & Application of Knowledge)*

• Students will be able to differentiate between popular and scholarly information sources and describe the characteristics of scholarly literature. *(ACRL Standard 1.2; PUL – Core Communication & Quantitative Skills, Critical Thinking)*

• Students will be able to identify which sources are most appropriate for an assignment. *(ACRL Standard 1.1, 1.2; PUL – Core Communication & Quantitative Skills, Critical Thinking)*

University Library

• Students will be able to describe and use basic services and resources offered by University Library. *(ACRL Standard 2.3; PUL – Core Communication & Quantitative Skills)*

• Students will know how to request help or advice from University Library, either in-person or online. *(ACRL Standard 2.3; PUL – Core Communication & Quantitative Skills)*

Citation Elements

• Students will be familiar with IUPUI's definition of plagiarism and recognize whether a particular piece of information needs to be cited to avoid plagiarizing. *(ACRL Standards 2.5, 5.2; PULs – Core Communication & Quantitative Skills, Critical Thinking, Values & Ethics)*

• Students will be able to identify the elements of a basic citation such as author and title for several types of resources (e.g., a book, a journal article, a web page) in order to avoid plagiarizing. *(ACRL Standards 2.5, 5.2; PULs – Core Communication & Quantitative Skills, Values & Ethics)*

Huisman's process was different, in several different ways. First, as the liaison to the School of Education, the students that were part of her instructional sessions were all potential educators, and had very specific needs in terms of what they needed to learn about the library resources; faculty were willing to share their syllabi, including future assignments, and Huisman worked with the faculty to customize the instructional session for the students. The first-year students seemed to be a logical choice due to the convenience of scheduling (instructional sessions and tour were often an hour or more), thus allowing for the time needed to set up the exercise. Huisman asked students to jot down key concepts, words, or phrases during her library instruction sessions, based on the words on the front of their note cards. Each group had a few minutes to collaborate on their answers; a representative from each group came up to the front of the class and put their key words and phrases into the Wordle textbox, and a "collaborative" Wordle was created from each group's responses.

Hanna specifically asked the students to create their own Wordles and send the URL for their individual word clouds to the entire class via the course management system so that they could view their classmates' Wordles, if desired; it was also used as a means of taking attendance for the class session. Hanna did not give specific terms for the students to record, rather, left it up to the students to create their own image to aid in recognition and application of terminology. Both Huisman and Hanna not only focused on having student become familiar with terminology commonly used in the library, but participation and engagement during the instructional session. Often, these sessions generated additional questions, but that was certainly better than the students simply sitting through the class, unfocused, or unclear about a particular technique or term.

By transforming the one-minute paper using Wordle, we found a simple way to accomplish both of our objectives: the learning outcomes can still be measured through the common words present in the word cloud creations, which could then compared with information literacy standards or concepts covered during the instruction session; and, students were staying on task during the instruction.

Student feedback has been extremely positive and we have been successful in implementing Wordle across disciplines, including, in our cases, Education, Exercise Science, and Tourism Management. While librarians may view assessment of one-shot, time-constrained instruction sessions with trepidation due to the students' varying skill levels skills, Wordle's user-friendly technology proved a quick and easy way to incorporate a visual measurement of the students' recall of content. We look forward to continued experimentation with Wordle in the classroom.

Bibliography

Association of College and Research Libraries.(2000). Information Literacy Competency Standards for Higher Education. Retrieved from http://www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompetency.cfm.

Choinski, E. & Emanuel, M. (2006). The one-minute paper and the one-hour class: Outcomes assessment for one-shot library instruction. *Reference Services Review. 34* (1), 148-155.

Berson, I.R., & Berson, M.J. (2009, April). Making sense of social studies with visualization tools. *Social Education, 73* (3), 124-127.

IUPUI University Library Information Literacy Strategy Group. (2009). *IUPUI University Library Information Literacy Competencies.* Retrieved from http://www.ulib.iupui.edu/research/infolit/competencies.

Vesely, P, & Gryder, N. (2007, Summer). Teaching visual imagery for vocabulary learning. *Academic Exchange Quarterly. 11* (2), 52-55. Retrieved from http://findarticles.com/p/articles/mi_hb3325/is_2_11/ai_n29397973/

Viegas, F. B, Wattenberg, M., & Feinberg, J. (2009, November/December). Participatory visualization with Wordle. *IEEE Transactions on Visualization and Computer Graphics , 15* (6), 1137-1146. Retrieved from http://www.computer.org/portal/web/csdl/abs/html/transtg/2009

Additional Resources

IUPUI Principles of Undergraduate Learning http://www.iport.iupui.edu/selfstudy/tl/puls/

RISE Initiative: http://www.iupui.edu/administration/acad_affairs/rise/

University College http://uc.iupui.edu/

Learning Communities http://uc.iupui.edu/staff/assessment/lc.asp

IUPUI University Library http://www.ulib.iupui.edu